


Avoiding the Pitfalls of Net Uniformity: Zero Rating and Nondiscrimination

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Abstract The current debate over network neutrality has not fully appreciated how service differentiation can benefit consumers and promote Internet adoption. On the demand-side, service differentiation addresses the primary obstacle to adoption, which is the lack of perceived need for Internet service, and reflects the growing heterogeneity of consumer demand. On the supply-side, monopolistic competition has long underscored how product differentiation can create stable equilibria with multiple providers—withstanding the presence of unexhausted economies of scale—by allowing competitors to target subsegments of the overall market that place a higher value on particular services. Conversely, prohibiting service differentiation would restrict competition to price and network size, which are factors that favor the largest players. These dynamics are well illustrated by global enforcement patterns with respect to a practice known as “zero rating”, which permits subscribers to access certain content without having that traffic count against their data caps. Of the six countries that have brought enforcement actions against zero rating, only India has categorically banned the practice. The other five countries (the United States, Chile, Canada, Slovenia, and The Netherlands) have adopted a more nuanced approach. A case-by-case approach is consistent with the empirical literature on vertical integration and restraints and the well-established principles for determining when to impose per se illegality and when to apply the “rule of reason”. The U.S. Supreme Court’s antitrust jurisprudence also helps identify factors that militate against liability, such as the lack of market power, nonexclusivity, and nonproprietary services.

Keywords Network neutrality · Product differentiation · Service differentiation · Zero rating

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1 Introduction

The European Union's 2015 adoption of its Single Telecom Market regulation and the U.S. court's 2016 decision that upheld the Federal Communications Commission's (FCC's) 2015 Open Internet Order [*U.S. Telecom Association v. FCC*, 825 F.3d 674 (D.C. Cir. 2016)] marked turning points in the decade-long controversy over network neutrality. These decisions moved the debate past *whether* to mandate network neutrality and instead focused it on *how* to enforce network neutrality.

Regulators who implement network neutrality have focused a great deal of attention on a practice known as “zero rating”: Zero-rating plans permit subscribers to access certain content or applications without having that traffic count against the subscribers' data cap. The most prominent examples in the U.S. are T-Mobile's Music Freedom and Binge On programs, which permit qualifying subscribers to stream unlimited amounts of music and video without paying any additional charges. Other Internet service providers (ISPs) are applying zero rating to popular applications such as Facebook, WhatsApp, and Wikipedia. Zero rating represents the most prominent example of a practice known as service differentiation, in which providers offer access to only part of the full range of Internet services (such as email-only plans) or provide access to a subset of services on a preferred basis.

The current debate has not fully appreciated how service differentiation can benefit consumers and encourage Internet adoption. On the demand-side, service differentiation addresses what surveys reveal is the major obstacle to adoption—that the majority of nonadopters do not see the value of an Internet connection—by providing preferential access to the content and services that particular users value the most. Service differentiation also reflects the growing heterogeneity of the demands that end users are placing on the network and can enable ISPs to create consumer value by providing offerings that are better tailored to what consumers want. As customer preferences become increasingly heterogeneous, ISPs naturally diversify their service offerings to meet that demand.

On the supply-side, service differentiation promotes competition by broadening the ways that ISPs can compete. Offering service-specific plans that are targeted at key subsegments of the population can promote entry even by firms that suffer from disadvantages in cost and network size. Conversely, prohibiting service differentiation would limit the dimensions of competition to price and network size; these are considerations that tend to favor the largest players, and these considerations risk imposing a government-mandated net uniformity. Service differentiation also responds to the technical realities of mobile broadband by reflecting variations in the costs of providing different services and supporting every application over every connection.

A review of the policies that different countries around the world have adopted with respect to service differentiation confirms these insights. Although press reports claim that as many as a dozen countries have banned zero rating (e.g., Guha and Aulakh 2015), a close analysis reveals that only one country—India—has actually taken that step. As described in greater detail below, six countries have pursued enforcement actions against zero rating plans. Of these, four clearly did not

categorically ban the practice, and a fifth may not have either and has likely been overridden by subsequent legislation that has been enacted by the European Union. Enforcement authorities' actions tend to apply to plans that provide easier access to proprietary services than to service differentiation plans that are based on services that are provided by third parties. They have also tended to target smaller providers that attempted to challenge well-entrenched incumbents.

Generally accepted principles of competition policy suggest that *ex ante* prohibition of service differentiation would be inappropriate. The circumstances that are identified by the theoretical literature under which vertical integration or coordination between content/services and conduit can harm consumers are stylized and limited. Moreover, surveys of the empirical literature indicate that vertical integration is usually benign or beneficial and conclude that consumers would be better off if regulators did not bar vertical restraints.

Competition policy has long recognized that *ex ante* prohibition is appropriate only for well-established and well-understood practices. When practices are novel and in a state of flux, as with service differentiation, consumer welfare and innovation would be better served by an *ex post* regime that places the burden on the party that challenges the practice to provide empirical evidence of harm. The U.S. Supreme Court's antitrust jurisprudence also helps identify factors that militate against liability, such as lack of market power, nonexclusivity, and nonproprietary services.

2 Demand-Side Considerations

Service differentiation can enhance demand for Internet connectivity in two ways. First, the applications and services that are featured by an ISP can appeal to nonadopters who do not see the need for an Internet subscription. Second, service differentiation may reflect the increasingly diverse demands that the universe of Internet users is placing on the Internet and consumers' differing preferences for different bundles of services. From this perspective, service differentiation may be the natural outgrowth of ISPs' attempts to respond efficiently to the increasing heterogeneity of consumer demand.

2.1 Demonstration of the Value of an Internet Connection

Service differentiation represents an effective way to overcome what has emerged as the most significant obstacle to broadband adoption: Surveys that have been conducted in both the developed and the developing world have repeatedly shown that the primary reason that most nonadopters choose not to subscribe to the Internet is that they do not see the value in doing so (EC 2013; Ofcom 2013; Zickuhr 2013; Carare et al. 2015; WEF 2015).

These results underscore the insufficiency of approaches that focus exclusively on subsidizing subscriptions and infrastructure investment. An effective adoption strategy must also address the demand side by demonstrating the value of an Internet connection. By featuring key apps—such as WhatsApp, Wikipedia, and

social media—service differentiation can make the benefits of an Internet connection tangible to nonadopters.

Recent empirical studies demonstrate how service differentiation can overcome these demand-side obstacles to Internet adoption (Futter and Gillwald 2015; Galpaya 2015; Galperin 2015; Thakur 2015). At the 2015 Internet Governance Forum in Brazil, Ricardo Pedraza-Barrios (2015), who is the Advisor for International Relations and Communications of the Colombian Comisión de Regulación de Comunicaciones (CRC), indicated that half of all subscribers to zero-rated services upgraded to a full data plan within 30 days.

2.2 The Increasing Diversity of the Internet

Another force that drives the emergence of service differentiation is the increasing diversity of Internet users (see generally Yoo 2012a). Debates over Internet policy tend to be framed by the way that the network existed in the mid-1990s, when the Internet became a mass-market phenomenon. At that time, the Internet consisted of a small number of users who ran a limited number of applications over a narrow range of technologies that were interconnected through a simple set of business relationships. In short, the Internet was used primarily by academics and tech-savvy early adopters to send email and browse the web over a personal computer that was connected to a telephone line. The user population and the primary applications were sufficiently uniform that the logical approach was a single network that was optimized for what that population wanted.

Technological and economic change has rendered each of those statements obsolete. The number of Internet users has exploded, which in turn has increased the diversity of the ways that the network is used. Simple low-bandwidth file transfer applications, such as email and web browsing, no longer dominate Internet usage. Instead, interactive and real-time applications, such as VoIP, and high-bandwidth applications, such as video, have become increasingly important.

Greater heterogeneity among end users, applications, technologies, and business relationships on the Internet suggests that the network should become more diverse as well. Indeed, increasing specialization is common as industries mature. In addition, different groups of users tend to use different clusters of apps. These differences in taste lead to variations in the services that are offered. As a result, service-specific plans are becoming increasingly common in countries around the world. A recent industry study observed how ISPs are becoming increasingly app centric and are starting to regard providers that offer voice and video services as friends and not foes. As many as 85% of ISPs offer value-based plans that charge different amounts for different types of data usage (Allot Communications 2014).

This diversification can benefit consumers: Creating more specialized and lower cost services that are better tailored to what particular subgroups of users want provides real economic benefits.

A brief analysis of developments in the UK offers some useful insights: British DSL provider Plusnet uses deep packet inspection (DPI) to divide the data stream into multiple different levels of priority and provides the highest service to VoIP and online gaming. While DPI has often been criticized, Plusnet has served as a model

of public disclosure: Plusnet explains how it prioritizes traffic and why connection speeds vary in particular cases, and offers meaningful guidance as to expected speeds during different times of day. The targeting of its services in this manner has enabled Plusnet to win numerous industry awards for network quality and customer satisfaction (Yoo 2012b).

Other British ISPs have followed suit. Only one UK provider (Sky) offers unmanaged access to the Internet. All of the others engage in some form of application-specific management (Cooper 2013).

The following thought experiment illustrates the benefits of such service differentiation: Suppose instead that these ISPs all offered identical services that provide unmanaged access to the entire Internet. On the one hand, competition among duplicate products would reduce prices. On the other hand, the provision of me-too offerings would provide little benefit to Internet users with clear preferences for certain applications and who would prefer the opportunity to subscribe a service that is better crafted to their desires (Yoo 2005). Economists have frequently recognized how excess entry by redundant products can reduce economic welfare (e.g., Mankiw and Whinston 1986).

T-Mobile's service offerings provide a useful illustration of how service differentiation can allow providers to survive by targeting smaller subsegments of the overall market. Zero rating streaming music (Music Freedom) and streaming video (Binge On) appeals to younger customers. Indeed, one might regard the unlimited texting plans that have now become the staple of the market as a classic example of service differentiation.

Such demand-side service differentiation is compatible with the nondiscrimination mandate that is associated with traditional tariff regulation (Yoo 2013). The textbook definition of discrimination is a price differential for the same product that is not justified by differences in product quality or cost (see, e.g., Tirole 1988; Scherer and Ross 1990). Tariff regulation simply requires that every service plan be available to every interested end user. It has always permitted ISPs to create different classes of service and to charge different amounts for them. Such differentiation is the natural outgrowth of consumer demand that is becoming increasingly diverse.

3 Supply-Side Considerations

The benefits that service differentiation can create in stimulating demand for Internet adoption and in delivering greater value to consumers is mirrored by potential benefits on the supply side. Service differentiation can offset the tendency towards natural monopoly that has long been the central policy problem that is posed by network industries and can promote competitive entry notwithstanding the cost advantages that are enjoyed by the incumbents. Service differentiation also provides ways to deal with the problems that stem from the reality of limited bandwidth.

3.1 Service Differentiation as a Way to Mitigate Economies of Scale

One of the central concerns about network industries is that scale economies may cause them to collapse into natural monopolies. On the supply side, scale economies can result from high fixed-cost investments that cause average cost to decline over the entire range of relevant output.¹ On the demand side, network economic effects, which exist when a network becomes more valuable as more people become part of it, can also give larger networks a decisive advantage.

The academic literature has largely overlooked how product differentiation in general and service differentiation in particular can mitigate the effects of economies of scale (Yoo 2005). The supply-side effects are most easily understood through the theory of “monopolistic competition” that was pioneered by Edward Chamberlin (1933).² Monopolistic competition adopts the same assumptions as the standard natural monopoly model except for two: It allows for the possibility of entry, and it relaxes the assumption that competing products constitute perfect substitutes.

In the short-run, a monopolistically competitive producer sets price and quantity in the same way as a traditional monopolist, producing at the quantity where marginal revenue equals marginal cost and setting the highest price possible, which is where that quantity falls along the demand curve. If the demand curve lies above the average cost curve, this quantity should permit the producer to capture monopoly profits.

If entry were impossible, this short-run equilibrium would be stable. Because monopolistic competition relaxes this assumption and permits entry, the presence of profits will attract entry by competitive firms. Product differentiation prevents entry from turning each producer into a price taker, however. Entry by new producers causes the demand curve that confronts each of the existing producers to shift inwards, as some customers shift their purchases to the new products, until all of the short-run supracompetitive profits have been dissipated, which occurs when the demand curve becomes tangent to the average cost curve.

Monopolistic competition illustrates how product differentiation can permit multiple producers to survive and can prevent a market from collapsing into a natural monopoly despite the presence of unexhausted economies of scale. Restricting producers to competing solely on price naturally gives the largest players a decisive advantage. Permitting producers to compete along dimensions other than price enables smaller players to survive despite having lower sales volumes and higher unit costs (and thus charging higher prices) by tailoring their products for subsegments of the market that place a particularly high value on different product attributes. The greater value that is created by product

¹ Declining average costs are a sufficient, but not necessary, condition for natural monopoly. More formally, natural monopoly only requires subadditivity, which exists when a single firm can satisfy the entire industry output at a lower cost than could two firms. This can occur even if average cost has begun to increase, so long as the average cost for the entire industry output remains below the average cost for half of the industry output (Baumol et al. 1982).

² For modern studies exploring monopolistic competition, see, e.g., Spence (1976), Dixit and Stiglitz (1977), Salop (1979), Hart (1985), Solow (1998) and Zhelobodko et al. (2012).

differentiation allows specialized providers to generate sufficient revenue to cover their up-front costs even though their volumes are significantly smaller than that of the leading players. Conversely, preventing product differentiation could cause the market to devolve into a natural monopoly. Some commentators initially noted that the fact that monopolistic competition reached equilibrium on the declining portion of the average cost curve necessarily entailed the presence of unexploited economies of scale. Later scholars showed that any inefficiencies in the price-quantity space resulting from the missed opportunity for lower production costs was offset in whole or in part by welfare gains from product diversity. Monopolistically competitive equilibria can thus represent constrained optima, with the welfare characteristics depending on which of these two offsetting considerations dominates (Bishop 1967; Spence 1976; Dixit and Stiglitz 1977).

At the same time, service differentiation can ameliorate the demand-side economies of scale created by network economic effects. If a smaller provider optimizes its network for particular functions that a particular subgroup of end users value particularly highly, those end users may be willing to join the smaller network notwithstanding the presence of network economic effects. The increase in value that is provided by network diversity can dominate any reductions in value resulting from market size (Katz and Shapiro 1985; Farrell and Saloner 1986).

So long as consumer preferences are sufficiently heterogeneous, network diversity can mitigate whatever demand-side economies of scale exist by virtue of network economic effects in much the same manner as it mitigates the supply-side economies of scale that are created by fixed costs. In addition, to the extent that different groups of end users derive utility from adopting one standard over another, network diversity can increase welfare by allowing end users to consume network services that lie closer to their ideal preferences.

The presence of multiple, differentiated networks may thus reflect the network owners' attempts to satisfy the underlying heterogeneity in consumer demand. Moreover, product differentiation in general and service differentiation in particular can allow smaller providers to survive by tailoring their offerings to appeal specially to subsegments of the overall market, as illustrated by the example of Plusnet discussed above.

Prohibiting service differentiation threatens to preempt this potential solution by narrowing the dimensions along which firms can compete. Forcing providers to compete solely on price and network size would reinforce the advantages that are enjoyed by the largest players. Such differentiation is particularly critical for fixed-line resellers and Mobile Virtual Network Operators (MVNOs). Because these providers lease all network elements from an existing ISP, they cannot differentiate in terms of network characteristics. The only dimension that is available for attracting customers aside from price is an emphasis on particular services.

3.2 Service Differentiation as a Way to Reflect Differences in Cost and to Lower Cost

Service differentiation may reflect real differences in cost. Consider for example zero rating plans that provide no-cost access to video services. To the extent that the

content being downloaded is cached locally, once the content is prepositioned in the cache, the traffic associated with that video will not have to pay transit to any other network. The lower prices that are paid for accessing such services may reflect real differences in cost. Under these circumstances, it would be potentially discriminatory not to zero rate access to those services.

Service differentiation may also reflect the costs of building networks. Constructing larger networks requires more capital, which in turn increases the fixed costs of service. For fixed-line networks, the ability to add capacity is constrained only by the physical space in the conduits and the rights of way. For mobile broadband, bandwidth is constrained by the amount of spectrum that the government chooses to allocate and the cost of the infrastructure that is required to utilize that spectrum. If no additional spectrum is available, a mobile network can add capacity only through increasingly costly infrastructure upgrades.

It is for this reason that some connections do not offer the full range of IP-enabled services. A familiar example is Internet access on airplanes and trains, which often do not support all applications, because a small number of users who are streaming video would rapidly exhaust all of the available capacity. Similarly, programs such as Free Basics exclude video and full resolution graphics. As noted below in the discussion of the Netherlands, these high-volume applications can serve as a useful proxy for apportioning the available bandwidth (Yoo 2006).

Another consideration that allows providers to support some applications instead of others is the cost and limitations of mobile devices. A significant percentage of data-enabled phones sold today are not true smart phones. Instead, they are “feature phones” that offer limited functionality at a cheaper price. The result is that certain applications may not run in certain environments. Under these circumstances, the differences in services that are supported may go hand-in-hand with saving money on devices.

These theoretical considerations underscore the ability of zero rating to often encourage Internet adoption and promote consumer welfare. These theoretical insights have been confirmed by empirical studies of zero rating, which uniformly conclude that zero rating is often beneficial and that categorically banning zero rating would likely be a mistake (see, e.g., Elaluf-Calderwood 2015; Futter and Gillwald 2015; Galpaya 2015; Galperin 2015).

4 Enforcement of Zero Rating as a Case Study in Net Uniformity

Economic theory thus provides a range of reasons why service differentiation can benefit consumers. The fact that 55% of ISPs offer application-centric plans and 49% of ISPs worldwide offer some form of zero rating provides at least some reason to believe that the practice is creating consumer benefits (Allot Communications 2014).

This section moves past pure theory to examine the specific cases of enforcement actions brought against zero rating. Most countries have taken a relatively

permissive approach. Although some media reports have claimed that as many as a dozen countries have banned zero rating,³ a close review of the actual record reveals this to be an overstatement. In the case of seven countries (Finland, Iceland, Estonia, Latvia, Lithuania, Malta, Japan), the claim appears to have misread a report from *Digital Fuel Monitor* (2014) that reported that zero rating had not been deployed in those countries (see Meyer 2014b for a correct characterization of this data). The lack of zero-rating plans appears to be more the result of lack of interest by ISPs than from the active discouragement of regulators. Other countries that have been alleged to have banned zero rating (Norway, Germany) have discouraged the practice but not taken any formal action.

Only six countries have brought enforcement actions against zero-rating plans (United States, Chile, Canada, Slovenia, the Netherlands, and India). Although commentators sometimes claim that these countries have banned all forms of zero rating (see, e.g., Savetheinternet.in Coalition 2015), a close review of the record reveals this to be a mischaracterization. Three of these countries did not adopt categorical bans and instead recognized that some forms of zero rating are permissible, and subsequent EU legislation has superseded the actions taken by two European countries. Enforcement actions tend to focus on attempts to zero rate proprietary services and have unfortunately tended to fall most heavily on smaller providers attempting to challenge the incumbents, therefore likely harming competition and consumers.

4.1 United States

The United States was home to the first complaint filed with a communications regulator about a zero-rated offering by MetroPCS (Yoo 2012b). The judicial decision that invalidated the FCC's first attempt to regulate network neutrality rendered this complaint moot before it could be resolved. Since then, the FCC has avoided adopting a clear position with respect to zero rating, although regulators may be starting to show more interest.

4.1.1 Open Internet Order and MetroPCS

The first zero-rating complaint was brought in January 2011 against MetroPCS under the first Open Internet Order adopted by the FCC (2010). At issue was whether MetroPCS's plan that permitted users to access YouTube without having that traffic count against their data cap violated the discrimination rule.

As of the end of 2010, MetroPCS was the fifth largest wireless provider in the U.S. With less than 3% market share, MetroPCS was almost twelve times smaller than the market leaders: AT&T and Verizon. In the markets in which it operated, MetroPCS controlled significantly less spectrum than its national rivals, which limited its ability to support video. The inability to support popular video applications such as YouTube put MetroPCS at a competitive disadvantage.

³ See, e.g., Bode (2015) and Kivuva (2015).

Despite being a relatively small provider, MetroPCS became the first U.S. provider to offer fourth-generation (4G) Long Term Evolution (LTE) service in September 2010. Because video delivered to mobile devices does not require the same resolution as full-sized television screens, MetroPCS was able to reduce the bandwidth that was needed by using Real Time Streaming Protocol (RTSP) to compress the video signal. In this way, MetroPCS was able to offer limited video in markets in which it possessed only the 1.4 MHz of spectrum that was originally allocated to it for the second-generation (2G) technology known as Personal Communications Systems (PCS) even though the recommended implementation for LTE requires 40 MHz.

Unable to offer service through a true smartphone, MetroPCS opted to deploy LTE through the Samsung Craft: a feature phone that employed an operating system known as Binary Runtime Environment for Wireless (BREW). Providers of many popular applications, including Flash and other web plug-ins, did not regard the BREW platform as sufficiently widespread to justify creating a version compatible with BREW.

MetroPCS self-consciously specialized in offering low-cost plans that provided more limited features than did its competitors. As Tom Keys, MetroPCS's chief operating officer, stated, "We didn't build this network or this device to be all things to all people" (Fitchard 2010). Requiring all of MetroPCS's service plans to support all applications on an equal basis would have made it impossible for them to compete. The feature phone platform faced real technical limitations that effectively prevented MetroPCS from supporting all forms of video. Indeed, many popular formats for encoding video (known as CODECs) did not have media players that were capable of running on BREW.

On January 3, 2011, MetroPCS revised its 4G LTE service plans. Most notably for the purposes of this article, its lower-end plans allowed unlimited YouTube access at no additional cost. One week later, a group of advocacy groups submitted a letter that complained that the MetroPCS plans that provided free unlimited access to YouTube plans while subjecting other video services such as Netflix to data caps violated the FCC's 2010 Open Internet Order.

As an initial matter, it is hard to see how any business practice that is implemented by a firm with less than 3% market share could hurt consumers or competition. Moreover, in an era where creating greater competition in wireless networks is a major policy goal, regulators should praise a service differentiation strategy that permitted MetroPCS to compete in LTE despite its control of less spectrum than its rivals controlled.

The FCC's determination not to act on any enforcement actions while the legal challenge to its 2010 Open Internet Order was pending before the courts meant that it did not take any action on this complaint. T-Mobile subsequently acquired MetroPCS in October 2012. The issue was mooted by the judicial invalidation of the 2010 Order by *Verizon v. FCC*, 740 F.3d 623 (D.C. Cir. 2014).

4.1.2 Open Internet Order, T-Mobile, and Comcast

After the 2010 Order was struck down, the FCC issued a new Open Internet Order in February 2015. In order to avoid meeting the same fate as the 2010 Order, the 2015 Order assiduously avoided framing its prohibitions in terms of discrimination. Instead, the 2015 Order established three bright-line rules against blocking, throttling, and paid prioritization. The FCC also adopted a general standard that banned unreasonable interference and unreasonable disadvantage, evaluated on a case-by-case basis. On June 14, 2016, the U.S. Court of Appeals for the D.C. Circuit upheld the 2015 Order [*U.S. Telecom Association v. FCC*, 825 F.3d 674 (D.C. Cir. 2016)].

The 2015 Order specifically declined categorically to prohibit zero rating, which it called sponsored data. Because the record regarding the relative merits of the practice was mixed, the FCC balanced the potential to distort competition against the ways new service offerings could benefit consumers and opted to address zero rating on a case-by-case basis (FCC 2015).

In June 2014, while the proceeding that led to the 2015 Open Internet Order was still ongoing, T-Mobile launched its Music Freedom program that permits subscribers to stream music without having that traffic count against their data caps. Notably, T-Mobile receives no fees from any content providers for this service, and it has Music Freedom for any music streaming service that can satisfy the technical requirements. At the time, T-Mobile was the fourth largest mobile provider in the U.S. With a 12% market share, T-Mobile was less than half the size of the two market leaders: Verizon and AT&T.

On November 10, 2015, T-Mobile launched a new zero-rating program called Binge On, which permits subscribers to have access to video services without having that traffic count against their data caps by optimizing the screen resolution to 480p. Again, this program was available to any video service that met the technical requirements. T-Mobile later introduced free music streaming to its MetroPCS customers through a program called Music Unlimited as well as a program called Data Maximizer that effectively allows users who watch video to extend their data plans by up to three times.

T-Mobile's zero rating program did not appear to raise many concerns for U.S. regulators. At a November 19, 2015, press coherence, FCC Chairman Thomas Wheeler called Binge On pro-competitive and innovative, although he pledged to continue to monitor its impact (Eggerton 2015). That same day, Comcast launched a video streaming service that is called Stream that for \$15 would not count against subscribers' data caps.

The FCC has begun to examine these zero-rating practices more closely. On December 16, 2015, the FCC issued letters to Comcast and T-Mobile to make sure that the regulator had all of the facts about their programs. On January 4, 2016, the Electronic Frontier Foundation complained that T-Mobile was applying its optimization techniques to all video and not just to streaming services that were enrolled in Binge On (Gillula 2016). Given that T-Mobile applies the practice to all forms of video, just as some wireless ISPs block all forms of video altogether, it is unclear whether the practice would violate any legal prohibition.

It is too soon to determine what the result of these investigations will be. For the purposes of this article, it suffices to note that as of October 2016, U.S. regulators

have not brought an enforcement action against any form of zero rating, and they have not adopted any categorical prohibition of the practice.

4.2 Chile

Chile is a prime example of a country that is often mistakenly claimed to have banned all forms of zero rating. In April 2012, Virgin Mobile began offering service as an MVNO that operates on Movistar's network. It offered unlimited access to WhatsApp to its customers who purchased a data plan. By the end of 2014, it had become the fifth-largest mobile provider in Chile with a market share of 1.3% (Layton and Elaluf Calderwood 2015).

Chile takes great pride in being the first country to have adopted a network neutrality law on August 2010. On January 29, 2013, the advocacy group, Neutralidad Sí, claimed that free access to WhatsApp violated Chile's network neutrality law and was harming competing message services, such as Line and Telegram. In February 21, 2013, Subsecretaria de Telecomunicaciones (SUBTEL), the Chilean regulator, rejected the claim, noting that the legislation permits ISPs to manage traffic so long as doing so does not impact competition and concluding that Virgin Mobile's plan did not prevent subscribers from accessing other applications. After a further exchange, SUBTEL closed the complaint.

The situation changed with the accession of network neutrality advocate Pedro Huichalaf as head of SUBTEL in March 2014. SUBTEL issued Circular No. 40 on April 14, 2014 (SUBTEL 2014a). Although this is sometimes described as a categorical ban of zero rating, SUBTEL did not ban all forms of zero rating. Instead, it banned zero-rating programs that did not include all apps of a similar nature. Implicitly, this order sanctioned zero-rating schemes that granted free access to all of one kind of app. Because Virgin Mobile's zero-rating plan included only one messaging service (WhatsApp), the Circular rendered it illegal, and Virgin Mobile converted it into a 30-day promotion. SUBTEL (2014b) issued additional guidance on May 27, 2014, prohibiting zero rating for social networks.

The debate over zero rating came to a head once again on July 23, 2014, when the Wikimedia Foundation and Wikimedia Chile sent a letter to SUBTEL that explained how their zero-rating service, Wikipedia Zero, operates and seeking clarification on whether Circular No. 40 would apply to it. Huichalaf saw a clear difference between zero-rating plans that combined social media access with voice and data and those that promote education. He further emphasized that the Circular was not a law or a regulation, but rather an invitation to companies to end the practice or to provide the same benefits to all traffic of the same class. He further clarified that the Circular was directed toward the practice of bundling social media apps with voice and data and was not a general ban on zero rating. He saw a clear difference between the type of zero rating that was offered by Wikipedia and the type of promotional offers that were previously banned by SUBTEL (Welinder and Schloeder 2014). SUBTEL's actions have proven controversial. Advocacy groups criticized the lack of punishment imposed on the ISPs as too lenient. They have also complained that the approval of Wikipedia Zero represents a double standard.

SUBTEL's approval of Wikipedia Zero plainly shows that Chile has not categorically banned zero rating. Instead, Chile regards some forms of zero rating as permissible and other forms as problematic. In particular, zero rating plans appear to pass legal muster so long as they are open to all similarly situated applications, which is the case with T-Mobile's Music Freedom and Binge On as well as Facebook's Free Basics.

Nevertheless, the application of network neutrality to Virgin Mobile's plan seems regrettable. With only a 1.3% market share, Virgin Mobile trailed market leaders Movistar (39%), ENTEL PCS (33%), and Claro (24%), as well as fellow new entrant Nextel (1.7%) (SUBTEL 2015). Virgin Mobile's small size makes it inconceivable that its actions could have harmed consumers. Moreover, as a new entrant, the company must provide customers with some reason to choose it above its more established rivals. Because MVNOs necessarily must use the same network as the incumbent, they cannot differentiate on download speeds or service availability. Instead, they may only differentiate on non-network parameters, such as marketing and customer service.

4.3 Canada

Canada extensively regulates ISPs, subjecting them to common carrier regulation and wholesale unbundling. Despite (or perhaps because of) this more heavy-handed approach to regulation, Canadian regulators have adopted a middle-of-the road approach to network neutrality. For example, on November 20, 2008, the Canadian Radio-Television and Telecommunications Commission (CRTC) ruled that Bell Canada's traffic shaping policies were nondiscriminatory in that they applied equally to Bell Canada's retail customers and the customers who were being served by its competitors via wholesale access (CRTC 2008). On October 21, 2009, CRTC issued an additional regulation on what constituted acceptable Internet traffic management practices that recognized the permissibility of network management as a last resort and banned practices that are "unjustly discriminatory", "unduly preferential", or anticompetitive (CRTC 2009). On January 25, 2011, CRTC issued a ruling that approved of usage-based billing (CRTC 2011).

Canada's record with respect to zero rating is similarly mixed. Most notably, on January 29, 2015, CRTC ordered Bell Mobility and Vidéotron to stop zero rating their proprietary mobile video services (CRTC 2015). The action against Vidéotron is particularly striking given that it is the fifth-largest wireless provider in Canada with only 12% market share in Quebec and less than 3% market share nationwide in a market where the three largest providers control 90% of all subscribers. Although CRTC generally prohibits ISPs from zero rating their own services, the regulator has indicated its willingness to permit zero rating of services that are owned by third parties (Nowak 2015). Vidéotron has begun testing these limits by offering a zero-rated service that is called Unlimited Music, which permits subscribers to access leading third-party music streaming services without that traffic counting against their data caps (Bode 2015).

In short, Canada does not categorically ban zero rating. In fact, media reports characterize the actions of Canadian regulators as having given zero rating the

“green light” (Bode 2015). To the extent that they restrict zero rating, it tends to be with respect to programs that favor proprietary services.

4.4 European Union

The final two countries that have engaged in enforcement actions against zero rating plans are both in Europe, although other countries such as Norway and Germany have criticized zero rating. The European Union’s recent legislation has superseded the actions that have been taken by individual EU members, and the recent guidance that was issued to National Regulatory Authorities by BEREC undercuts any attempts to prohibit zero rating categorically.

4.4.1 Slovenia

Zero rating, known in Slovenia as free data transfer, has been common in Slovenia since 2007. Market leader Telekom Slovenije (48% of the mobile market and 35% of the fixed market as of the end of 2014) offers zero-rated access to video from the UEFA Champions League and HBO Go as well as to the music service Deezer and its TviN proprietary online storage. The second largest mobile provider, Si.mobil (29% of the mobile market), provides zero-rated access to the World Cup, the VOYO video service, and the Hangar Mapa cloud storage service. The third largest mobile provider, Tušmobil (13% of the mobile market and 1% of the fixed market), provided zero-rated access to its own portal and to content that is downloaded from its site. Fixed-only provider Amis (12% of the fixed market) provided zero-rated content from its own website, email, and from its Amis MobiaTV service (Layton and Elaluf Calderwood 2015).

Slovenia enacted network neutrality legislation on December 31, 2012. During the legislative process, lawmakers specifically deleted a provision that would have prohibited price differentiation.

On July 17, 2014, Dušan Caf, in his capacity as chair of the Electronic Communications Council (SEK), which advises the government on the development of electronic communications, complained about zero-rating practices to both the Slovenian regulator, the Agency for Communications Networks and Services (AKOS), and the Slovenian Competition Authority. The complaint focused exclusively on Telekom Slovenia and Si.mobil and made it a point to exclude mention of the smaller providers.

The Competition Authority responded on September 4, 2014, with a nonbinding opinion that rejected the call for a per se prohibition of all zero-rated services. The Competition Authority concluded that doing so might harm rather than benefit consumers and that the assessment of the legality of the mobile operators’ offers should be based on the effects of the provision of such services.

AKOS did not take any action with respect to the complaint until December 18, 2014. On January 23, 2015, AKOS found that several aspects of zero-rating plans that were provided by the two largest operators violated Slovenia’s network neutrality law. Somewhat surprisingly, AKOS focused on relatively minor zero-rated services while leaving the most important zero-rated offerings intact. With

respect to Telekom Slovenije, AKOS ordered it to stop zero rating the Deezer music streaming service while permitting it to continue zero rating the UEFA Champions League and HBO Go. AKOS similarly ordered Si.mobil to stop zero rating the Hangar Mapa cloud storage service while permitting it to continue zero rating the World Cup and the VOYO video service.

AKOS followed this initial action with a ruling on February 20, 2015, that ordered Tušmobil and Amis to end all of their zero-rating services. As noted above, Tušmobil was only zero rating content from its own portal, while Amis was also zero rating content from its video service.

The fact that AKOS permitted some zero-rated services to continue undercuts any claims that Slovenia categorically banned zero rating. AKOS appears to have subjected zero-rating plans that provided no-cost access to proprietary content to greater scrutiny than was true for zero-rating plans that provided no-cost access to third-party content. Moreover, the manner in which AKOS applied the network neutrality law to zero rating seems somewhat peculiar. Dušan Caf, who brought the initial complaint, has expressed regret that the regulator imposed tougher penalties on the smaller providers by ordering them to stop all of their zero-rating practices, while giving the incumbent a lighter reprimand.

With respect to the larger providers, the regulator only ordered them to stop zero rating minor services. In music streaming, Deezer trails far behind market leader Spotify, while Hangar Mapa is a trivial cloud provider compared with companies such as Google and EMC. At the same time, AKOS permitted the larger providers to continue to zero rate their premier video offerings of the World Cup, UEFA Champions League, VOYO, and HBO Go. In short, as was the case in Chile, prohibitions of zero rating appear to have placed a heavier burden on smaller providers.

In any event, the EU's recent legislation on the Single Telecom Market discussed below appears to have superseded Slovenia's policies with respect to zero rating. Indeed, members of the government acknowledged that the EU's actions effectively override Slovenia's zero-rating decisions (RTV SLO 2015).

4.4.2 *Netherlands*

In the Netherlands, zero rating is known as positive price discrimination, and the Dutch regulator, the Autoriteit Consument & Markt (ACM), has enforced the network neutrality law that it enacted on June 4, 2012, against zero rating plans on three separate occasions.

ACM brought its first enforcement action against zero rating on June 25, 2013, when it issued an order sanctioning Sizz: a mobile phone brand that was created jointly by Vodafone and the television channel RTL and that was targeted at young women. The problem was that the Sizz app permitted access to RTL content without having that traffic count against subscribers' data caps. The regulator ordered Vodafone to offer the Sizz app as an independent service (ACM 2013a). Although the joint venture was supposed to run through 2016, Sizz stopped accepting new customers on June 1, 2014: two years before its scheduled end (Telecompaper 2011; Schellevis 2014; Telecompaper 2014).

The second enforcement action occurred on December 18, 2014, when ACM fined Vodafone for allowing customers to access HBO Go for three months without having that traffic count against their data caps. In imposing this fine, the regulator noted that Vodafone's previous experience with Sizz, while not an aggravating circumstance, did put Vodafone on notice that its arrangement with HBO Go likely violated the Dutch network neutrality law (ACM 2014).

On May 27, 2015, after a year of preparation, the Dutch Department of Economic Affairs issued guidelines on network neutrality. These guidelines effectively prohibited zero rating when it ruled that all forms of positive and negative price discrimination violated the Dutch network neutrality law (Kamp 2015). Pursuant to these guidelines, on July 22, 2015, ACM ordered Vodafone to stop selling subscriptions to its Endless Spotify service that was offered as part of its youth-oriented Hi brand, which allowed subscribers to stream music without having that traffic count against their data cap. ACM did "grandfather" existing Endless Spotify customers for up to two years when their contract expired (ACM 2015).

The Dutch regulator has thus enforced the network neutrality law aggressively with respect to zero-rating plans, applying it to services that are provided by third parties as well as to proprietary services. ACM has not been wholly inflexible in applying the network neutrality concept. Most notably, on December 30, 2013, ACM allowed T-Mobile to continue to block streaming services such as YouTube and Spotify on the free Wi-Fi service that it offered on Dutch Railways (NS) trains. Given the bandwidth limitations, ACM concluded that such blocking was an appropriate measure to minimize the effects congestion that allowed as many riders as possible to use the internet connection (ACM 2013b, c).

T-Mobile's experience with its free train service makes it is clear that Dutch law does not invalidate any practice that favors or disfavors any application. However, such leniency has its limits. On December 18, 2014, ACM fined KPN for the manner in which it was providing Free Basic Internet service in 176 locations, including Schiphol Airport. The Hybrid Hotspots turned off all of the ports except for ports 80–443, which had the effect of blocking applications such as BitTorrent, File Transfer Protocol, SSH, Telnet, VPN, and VoIP. Users who wished to use those services had to purchase Premium Internet service (ACM 2014).

In addition, certain Dutch policy leaders have been critical of ACM's hostility towards service differentiation. For example, Remko Bos, the former director of the Dutch Independent Post and Telecommunications Authority (*Onafhankelijke Post en Telecommunicatie Autoriteit*), has questioned whether the difficulties in offering a variety of services that were caused by the regulations might actually be harming consumers (Schoemaker 2012). Similarly, then-European Commissioner for Digital Agenda (and previously European Commissioner for Competition) Kroes (2012) asked, so long as consumers know what they are getting, "If consumers want to obtain discounts because they only plan to use limited online services, why stand in their way?" (see also Meyer 2014a).

In any event, as will be discussed below, the EU's recent legislation on the Single Telecom Market has effectively displaced Dutch law on zero rating.

4.4.3 EU's Single Telecom Market

The Single Telecom Market legislation that was enacted by the European Union has superseded Slovenia's and Netherlands policies with respect to zero rating. Initially proposed by Neelie Kroes (2013), the European Parliament added amendments on April 3, 2014, that would have made service differentiation much more difficult to sustain. Specifically, the Parliament added a provision that defined net neutrality as "the principle according to which all internet traffic is treated equally, without discrimination, restriction or interference, independently of its sender, recipient, type, content, device, service or application". The Parliament also added a provision that specified, "Providers of internet access to end-users shall not discriminate between functionally equivalent services and applications" (European Parliament 2014).

The legislation was then sent to the Council, where it soon encountered considerable opposition. Documents from the Italian Presidency in November 2014 showed that the Council advocated deleting both the net neutrality definition and the prohibition on discrimination from the legislation. A subsequent document that was released by the Latvian Presidency in January 2015 similarly concluded that the provision that explicitly banned positive price discrimination (including zero rating) "cannot gain the necessary support" and that "[t]he issue of positive price discrimination could be left outside the scope of this instrument" (CEU 2014, 2015a).

The Parliament, Council, and Commission engaged in a trilogue throughout the spring, and eventually reached a compromise on June 30, 2015, that omitted both of the provisions that had been added by the Parliament. The Council approved the compromise language on October 1, although the Netherlands and Slovenia issued statements that criticized the failure to include stronger net neutrality protections. The Parliament followed suit on October 27 (CEU 2015b, c, d; EU 2015).

A consensus has emerged about the likely import of this compromise. First, the final legislation is widely regarded as legitimating zero rating as a practice. Second, the legislation effectively repeals both the Netherlands and Slovenia law with respect to net neutrality. Indeed, the Netherlands conceded as much in the statement that it issued when the Council adopted the legislation, and Dušan Caf acknowledged that the EU law in this area had overridden Slovenia's (CEU 2015c; RTV SLO 2015).

4.4.4 Body of European Regulators for Electronic Communications (BEREC)

On August 30, 2016, the Body of European Regulators for Electronic Communications (BEREC) (2016) issued guidelines on how member countries should implement the network neutrality legislation that had been adopted by the EU. Although not binding, these guidelines are likely to influence how national regulatory authorities (NRAs) interpret the legislation.

With respect to zero rating, the final draft dropped the language in earlier drafts that would have categorically prohibited the practice in favor of more moderate language. The guidelines suggest that one particular form of zero rating should be

prohibited: specifically, blocking or slowing down all applications except for the zero-rated application once the data cap is reached. NRAs should evaluate all other forms of zero rating on a case-by-case basis and take into account such considerations as the market share of an ISP and the content provider; the effects on the choice of applications; and the scale of the practice (BEREC 2016, n.d.). Following the publication of these guidelines, several major European ISPs launched or prepared to launch plans that provided zero-rated access to music, video, and sports (Wood 2016).

4.5 India

On February 8, 2016, India became the only country categorically to prohibit zero rating when the Telecommunications Regulatory Authority of India (TRAI) issued a regulation that was entitled, “Prohibition of Discriminatory Tariffs for Data Services, 2016”. The regulation prohibits all tariffs for data services that differentiate; the regulation is based on a concern that such differentiation might harm small content providers and allow ISPs to favor proprietary services. Although the explanatory memorandum acknowledged that differential tariff offerings such as zero rating “can have positive as well as negative impact”, TRAI concluded that an *ex ante* prohibition would create greater clarity and reduce enforcement costs. The explanatory memorandum did rely in part on the mistaken belief that the Netherlands and Chile had categorically banned zero rating (TRAI 2016).

Close analysis of the actions by various governments with respect to service differentiation yields a picture that is quite different from the one that is often described. Only one country has categorically banned zero rating. The other countries that have undertaken enforcement actions against zero rating plans have evaluated those plans on a case-by-case basis, finding some forms of zero rating to be permissible and other forms to be impermissible. In particular, enforcement authorities have exhibited a greater willingness to accommodate zero-rating plans that involve services that are provided by third parties and have reserved their harshest criticism for attempts to zero rate proprietary services.

The enforcement history also reveals what scholars who have studied zero rating empirically have consistency pointed out: that zero rating tends to be a strategy that is undertaken by smaller providers that are attempting to compete with incumbents. Enforcement authorities should give these smaller players wide flexibility over the ways that they try to compete. The unfortunate reality is that all too often the enforcement policies have hurt the smaller players that policies should be designed to nurture (see, e.g., Elaluf-Calderwood 2015; Futter and Gillwald 2015; Galpaya 2015; Galperin 2015).

5 Analysis of Potential Anticompetitive Effects

The foregoing economic analysis provides ample reason for inferring that permitting service differentiation could well yield substantial benefits both in promoting Internet adoption and in benefiting consumers. The enforcement history

of zero rating provides another reason to be skeptical of calls for categorical prohibition of service differentiation.

These conclusions draw further support from classic principles of competition policy. A review of the literature bolsters the conclusion that enforcement officials should evaluate service differentiation on a case-by-case basis with the benefit of the doubt going to the innovation.

5.1 Impact on Consumer Welfare

Concerns about agreements between applications and ISPs are fundamentally about contractual cooperation between two levels in the same chain of production: the area of competition policy that is often described as “vertical restraints”. The conventional wisdom about vertical contractual restraints has undergone something of a sea change over the past half century. Although the conventional economic wisdom was once hostile towards vertical restraints, the modern economic literature has shown the circumstances under which vertical restraints can harm consumers are considerably rarer than once thought. Many models show ambiguous results (see, e.g., Vernon and Graham 1971; Salinger 1988) or even consumer benefit (see, e.g., Spengler 1950; Machlup and Taber 1960). The models that show potential consumer harm tend to be highly stylized and subject to restrictive assumptions (see, e.g., Hylton and Salinger 2001). The restrictive nature of these models makes the equilibria in game theoretic models quite sensitive to changes in assumptions and often causes them to exhibit large, discontinuous changes in response to small changes to the underlying parameters. The sensitivity to assumptions has led some to call game theoretic models “Goldilocks theories”, because every parameter must neither be too big nor too small for the theory even to be plausible (Liebowitz and Margolis 1999). Thus, policymakers must be careful that all of the factual predicates of each model are satisfied before inferring that consumers are being harmed (Ayres 1990).

Even more fundamentally, the game theoretic models typically cited as supporting consumer harm make no attempt to formalize the overall impact on consumer welfare, either by offering a metric for determining optimal innovation or by taking into account potential efficiencies. The problem is that these models assume precisely the type of market structure that is likely to give rise to these efficiencies (Hylton and Salinger 2001). It is for this reason that the creators of these models have cautioned that they would not support the broad per se rules (Whinston 1990).

The empirical literature that shows that coordination restraints tend to promote consumer welfare supports the theoretical literature that indicates that vertical restraints harm consumers only under particular circumstances. For example, a study conducted by four members of the FTC’s staff surveying 22 published empirical studies found “a paucity of support for the proposition that vertical restraints/vertical integration are likely to harm consumers”. Only one study unambiguously found that vertical integration harmed consumers, and “in this instance, the losses are miniscule (\$0.60 per cable subscriber per year)”. On the other hand, “a far greater number of studies found that the use of vertical restraints

in the particular context studied improved welfare unambiguously”. The survey thus concluded, “Most studies find evidence that vertical restraints/vertical integration are pro-competitive”. The weight of the evidence thus “suggests that vertical restraints are likely to be benign or welfare enhancing”, which in turn provides empirical support for placing the burden on those opposing the practice (Cooper et al. 2005).

Lafontaine and Slade (2007, p. 680) conducted a survey of the empirical literature on vertical integration. Although they did not have any particular conclusion in mind when they began their review, they were somewhat surprised to find that, aside from a few isolated studies, the weight of the evidence indicated that “under most circumstances, profit-maximizing vertical-integration decisions are efficient, not just from firms’ but also from the consumers’ points of view”. The survey concluded that “faced with a vertical arrangement, the burden of evidence should be placed on competition authorities to demonstrate that that arrangement is harmful before the practice is attacked”. Moreover, the survey found “clear evidence that restrictions on vertical integration that are imposed... on owners of retail networks are usually detrimental to consumers”. They thus called on “government agencies to reconsider the validity of such restrictions”.

The same authors published a survey of the empirical literature on vertical restraints in the *Handbook of Antitrust Economics*. The authors found the empirical evidence to be “quite striking”, “surprisingly consistent”, “consistent and convincing”, and even “compelling”. As a general matter, “privately imposed vertical restraints benefit consumers or at least do not harm them”, while government mandates or prohibitions of vertical restraints “systematically reduce consumer welfare or at least do not improve it”. Together “[t]he evidence... supports the conclusion that in these markets, manufacturer and consumer interests are apt to be aligned, while interference in the market [by the government] is accomplished at the expense of consumers (and of course manufacturers)”. The authors conclude that “the empirical evidence suggests that in fact a relaxed antitrust attitude towards [vertical] restraints may well be warranted” (Lafontaine and Slade 2008, p. 408).

A recent survey of the literature by a leading vertical integration theorist and former FCC Chief Economist that appeared in the same volume similarly concludes, “A general presumption that vertical integration is pro-competitive is warranted by a substantial economics literature identifying efficiency benefits of vertical integration, including empirical studies demonstrating positive effects of vertical integration in various industries” (Riordan 2008, p. 169).

Taken together, the theoretical and empirical literature on vertical restraints and vertical integration strongly implies that vertical coordination typically benefits consumers. The question is what implications that inference has for calls for prohibiting vertical coordination in the Internet industry.

5.2 Ex Post Case-by-Case Review Over Ex Ante Per Se Illegality

The U.S. Supreme Court’s antitrust jurisprudence provides a useful framework for determining whether enforcement authorities should categorically prohibit zero

rating or whether they should evaluate the practice on a case-by-case basis (Yoo 2007). The primary decision is whether to engage in the type of ex post case-by-case inquiry that characterizes the rule of reason or to apply the type of ex ante categorical prohibition that is associated with per se illegality.

Since the earliest antitrust decisions, the U.S. Supreme Court has recognized that the default rule is the rule of reason [*Standard Oil Co. of New Jersey v. United States*, 221 U.S. 1 (1911)]. Thus, competition policy authorities should generally undertake a fact-specific inquiry into a practice's actual effect on consumers when evaluating a practice. The Supreme Court has repeatedly recognized that case-by-case analysis is particularly important for new practices that are not well understood. Only when long experience has convincingly proven that the practice is almost always harmful should a practice be treated as illegal per se.⁴

The Supreme Court reiterated its framework for determining whether to deviate from the rule of reason and instead treat a practice as illegal per se in its recent decisions on vertical restraints. In *State Oil Co v. Khan*, 522 U.S. 3 (1997), the Court recognized that “most antitrust claims are analyzed under a ‘rule of reason,’” under which courts evaluate the competitive impact of a particular practice on a case-by-case basis in light of all of the facts. Only if a court has sufficient experience with a particular practice to conclude with confidence that it evinces “such predictable and pernicious anticompetitive effect, and such limited potential for procompetitive benefit” that nothing would be lost by prohibiting it without any detailed inquiry into the specific facts should it categorically prohibit and declared illegal per se. If, on the other hand, “the economic impact of [the challenged] practices [are] not immediately obvious”, courts should refrain from imposing a per se rule and continue to apply the rule of reason.

The Court reiterated these same principles in *Leegin Creative Leather Products, Inc. v. PSKS, Inc.*, 551 U.S. 877 (2007). The Court began by noting, “[t]he rule of reason is the accepted standard for testing whether a practice restrains trade in violation of” the antitrust laws and that courts should declare a practice illegal per se only if it evinces “manifestly anticompetitive” effects and a “lack [of] any redeeming virtue”. The Court continued:

As a consequence, the *per se* rule is appropriate only after courts have had considerable experience with the type of restraint at issue and only if courts can predict with confidence that it would be invalidated in all or almost all instances under the rule of reason. It should come as no surprise, then, that “we have expressed reluctance to adopt *per se* rules with regard to restraints imposed in the context of business relationships where the economic impact of certain practices is not immediately obvious”. And, as we have stated, a

⁴ See *FTC v. Indiana Federation of Dentists*, 476 U.S. 447, 458–459 (1986); *Arizona v. Maricopa County Medical Society*, 457 U.S. 332, 342 (1982); *Broadcast Music, Inc. v. Columbia Broadcasting System, Inc.*, 441 U.S. 1, 9, 19 n.33 (1979); *Continental T.V., Inc. v. GTE Sylvania Inc.*, 433 U.S. 36, 49–50, 58–59 (1977); *United States v. Topco Associates, Inc.*, 405 U.S. 596, 607–608 (1972); *White Motor Co. v. United States*, 372 U.S. 253, 263 (1963); *Northern Pacific Railway Co. v. United States*, 356 U.S. 1, 5 (1958).

“departure from the rule-of-reason standard must be based upon demonstrable economic effect...”

The implications for the debate over service differentiation are clear: Categorical prohibition of new practices like service differentiation with which policymakers do not have much experience would be improper. In the absence of a clear indication of what the competitive impact of permitting service differentiation might be, those practices are better analyzed under the type of *ex post*, case-by-case approach that characterizes the rule of reason rather than the *ex ante*, categorical approach that characterizes *per se* illegality, with the burden of proof placed on the party challenging the practice. Indeed, scholars who study zero rating empirically, many of whom are quite skeptical of the practice, acknowledge that such practices may well be beneficial. Accordingly, they caution against erecting a *per se* prohibition of zero rating (Futter and Gillwald 2015; Galpaya 2015; Galperin 2015; Layton and Elaluf Calderwood 2015; Thakur 2015).

5.3 Factors That Weigh Against Liability in a Case-by-Case Review

Competition policy provides useful guidance as to how to apply a case-by-case approach to zero rating. Basic features such as the lack of market power, the lack of exclusivity, and the noninvolvement of proprietary services can provide safe harbors that can give clear guidance to those who attempt to promote broader network deployment and adoption.

5.3.1 Absence of Market Power

The first step under any rule-of-reason competition policy analysis is the determination of whether a firm has market power. Although the U.S. Supreme Court has maintained *per se* illegality without respect to market power for horizontal restraints, it has declined to apply *per se* illegality in vertical restraints cases where the defendant lacks market power [*Jefferson Parish Hospital District No. 2 v. Hyde*, 466 U.S. 2, 13–18 (1984); *Northwest Wholesale Stationers, Inc. v. Pacific Stationery & Printing Co.*, 472 U.S. 284, 296 (1985)]. For vertical restraints cases governed by the case-by-case approach that is associated with the rule of reason, market power is a “significant consideration” (*Leegin*, 551 U.S. at 885–886).⁵

Market power represents a threshold inquiry for inferring anticompetitive effects (Werden 2014), although direct proof of anticompetitive effects may render such an inference unnecessary [*FTC v. Indiana Federation of Dentists*, 476 U.S. 447, 460 (1986); *NCAA v. Board of Regents*, 468 U.S. 85, 109–110 (1984)].

⁵ See also *Copperweld Corp. v. Independent Tube Corp.*, 467 U.S. 752, 768 (1984) (characterizing the rule of reason as “an inquiry into market power and market structure designed to assess the combination’s actual effect”).

5.3.2 Nonexclusivity

Another factor that tends to absolve parties from liability is a lack of exclusivity. In this regard, the U.S. Supreme Court's decision in *Broadcast Music, Inc. v. Columbia Broadcasting System, Inc.*, 441 U.S. 1 (1979), is particularly instructive. That case involved a joint venture that licensed copyrighted music together as a bundle under a blanket license. This practice created a new product that provided real benefits to consumers. The fact that the license was nonexclusive left would-be licensees free to strike deals with composers and vice versa.

According to the Supreme Court, the lack of experience with the practice and the fact that the combination created a new product strongly counseled against subjecting these blanket licenses to a per se rule that categorically declared the practice illegal. Moreover, the nonexclusive nature of the licenses provided another reason that argued against categorical prohibition, since the ability to license outside of the collective mitigated the risk of consumer harm. The Court therefore held that such practices should be evaluated on a case-by-case basis under the rule of reason. Because the lower court had applied a per se rule without considering the rule of reason, the Supreme Court remanded the case so that the lower court could consider the proper application of the rule of reason in the first instance.

On remand, the lower court relied on the fact that CBS remained free to license outside the blanket license. The trial court had found that the viability of individual licensing limited the collective's ability to harm consumers [*Columbia Broadcasting System, Inc. v. American Society Composers, Authors & Publishers*, 620 F.2d 930, 936 (2d Cir. 1980)].

The implications of this case for Internet service differentiation are clear. Like the collectives in *Broadcast Music*, the combinations at issue here create new products that benefit consumers in unique ways. Like the collectives in *Broadcast Music*, zero-rating programs such as Binge On and Free Basics are nonexclusive, which allows anyone who wants access to any apps without having to through the zero rating program to do so.

In short, nonexclusivity serves as an important safety valve that greatly limits the ability to harm consumers. Nonexclusivity is thus a key factor that can protect service differentiation plans from liability.

5.3.3 Nonproprietary Services

The last consideration is whether the services that are being used to differentiation the ISP's offerings are proprietary or provided by a third party. When the company that owns the network is the same company that provides the service, the combination is properly regarded as a form of vertical integration. When the service is owned by a third party that simply signs a contract with the network, the combination is properly regarded as a vertical contractual restraint.

Vertical restraints are widely regarded as less problematic than vertical integration in that they tend to be more flexible, shorter lived, and cover less than the entirety of either firm's price and output decisions (see, e.g., Hovenkamp 2005).

Antitrust law thus provides an economic justification for treating service differentiation based around services provided by third parties more leniently.

Key zero-rating programs are not restricted to proprietary services. For example, Facebook's Free Basics is open to any application that can satisfy certain basic technical requirements. The openness of a particular program to nonproprietary services indicates that it is properly categorized as a vertical restraint instead of vertical integration, which reduces the likelihood of a harm to competition.

6 Conclusion

Service differentiation can yield many economic benefits. It can promote Internet adoption by demonstrating the value of an Internet connection. It can allow consumers to enjoy service plans that are more closely tailored to their preferences. It can allow smaller providers to compete more effectively with larger and more entrenched incumbents and can provide useful ways to reduce costs.

Well-established principles of competition policy offer a sound basis for creating the framework for evaluating claims that such practices are anticompetitive. In short, service differentiation's relative novelty and potential benefits counsel against erecting a categorical prohibition of the practice. Instead, enforcement authorities should evaluate the propriety of service differentiation through the case-by-case approach that is associated with the rule of reason. Any more restrictive rule threatens to deprive innovation and experimentation of the breathing room that it needs to survive.

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